v5,pt1

ISSN 0085-0683

v5,pt1

MEMOIRS OF THE HOURGLASS CRUISES

Published by
Marine Research Laboratory
Florida Department of Natural Resources
St. Petersburg, Florida

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VOLUME V MAY 1979 PART I

A NEW SPECIES OF *LINARESIA* (COPEPODA: LAMIPPIDAE) ENDOPARASITIC IN THE OCTOCORAL *PLACOGORGIA* FROM THE GULF OF MEXICO

By

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ABSTRACT

Linaresia De Zulueta, 1908, was previously known from one species, *L. mamillifera* De Zulueta, 1908, an endoparasite of a paramuriceid octocoral, *Paramuricea clavata* (Risso, 1826), in the Mediterranean Sea. *Linaresia bouligandi* n. sp., an endoparasite of another paramuriceid, *Placogorgia* sp., in the eastern Gulf of Mexico, differs from *L. mamillifera* by lacking pairs of ventrolateral papilliferous bosses, possessing only 0-3, not 9-10, setules on first antennae, and having a bifid, not simple, claw on second antennae, in addition to differences in body prolongations.

INTRODUCTION

Several enigmatic, stellate, endoparasitic organisms were discovered during a study of octocorals collected during the Hourglass Cruises in the eastern Gulf of Mexico. One of these was described in an earlier paper (Stock, 1978) as *Magnippe caputmedusae* n. gen., n. sp., a copepod of the family Lamippidae found in the coenenchyme of members of the genus *Thesea* Duchassaing and Michelotti, 1860. The present material consists of three other lamippid specimens, but this time lodged within polyps of a species of the octocoral, *Placogorgia* Studer, 1887 (Paramuriceidae). These specimens are referable to the hitherto monospecific genus *Linaresia* De Zulueta, 1908.

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This public document was promulgated at an annual cost of $375 or $0.19 per copy to provide the scientific data necessary to preserve, manage, and protect Florida's marine resources and to increase public awareness of the detailed information needed to wisely govern our marine environment.

The male of *L. mamillifera* De Zulueta, 1908, upon which was based the description of the genus *Linaresia*, has a fusiform body without prolongations but for the caudal rami. Females of *L. mamillifera*, first discovered by Bouligand and Delamare Deboutteville (1959), have stellate bodies, caused by the presence of nine pairs of partly biramous, snake-like prolongations. *Linaresia mamillifera*, known only from the western Mediterranean, lives in calices (Bouligand, 1960: pl. 9) of *Paramuricea clavata* (Risso, 1826) [often cited as *P. chamaeleon* (Von Koch, 1887); see Weinberg, 1976: 94], another octocoral of the family Paramuriceidae.

The Hourglass specimens are females showing a number of differences from female *L. mamillifera*; hence, I consider them a new species. The male of this new species unfortunately remains unknown.

ACKNOWLEDGEMENTS

I thank Ms. J. W. Smith, Florida Department of Natural Resources Marine Research Laboratory, who discovered the specimens and sent them to me for study.

METHODS AND MATERIALS

These parasites were found on octocorals collected during the Hourglass Cruises, a 28-month sampling program conducted on the central west Florida shelf off Tampa Bay and Sanibel Island by the Florida Department of Natural Resources Marine Research Laboratory, utilizing the R/V *Hernan Cortez*. Specimens reported herein were collected only at Station E (Figure 1), 27°37′N, 84°13′W, in 73 m depth. Complete descriptions of stations, sampling gear, methods and collection data have been published by Joyce and Williams (1969) in this series.

The specimens are deposited in the Zoölogisch Museum, Amsterdam (ZMA), and the U.S. National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM).

Symbols used in this paper for various parts of the body, corresponding with those proposed by Bouligand and Delamare Deboutteville (1959), are:

α, β, γ: dorsal trunk prolongations
a-e: ventral trunk prolongations
a_1: first antenna
a_2: second antenna
cf: central fold
f: furcal rami
g: genital apertures
o_1, o_2: papilliferous organs 1, 2
p_1, p_2: legs 1, 2
pa_1, pa_2: papilliferous bosses
t: terminal swelling
v: presumed vulval sclerotizations

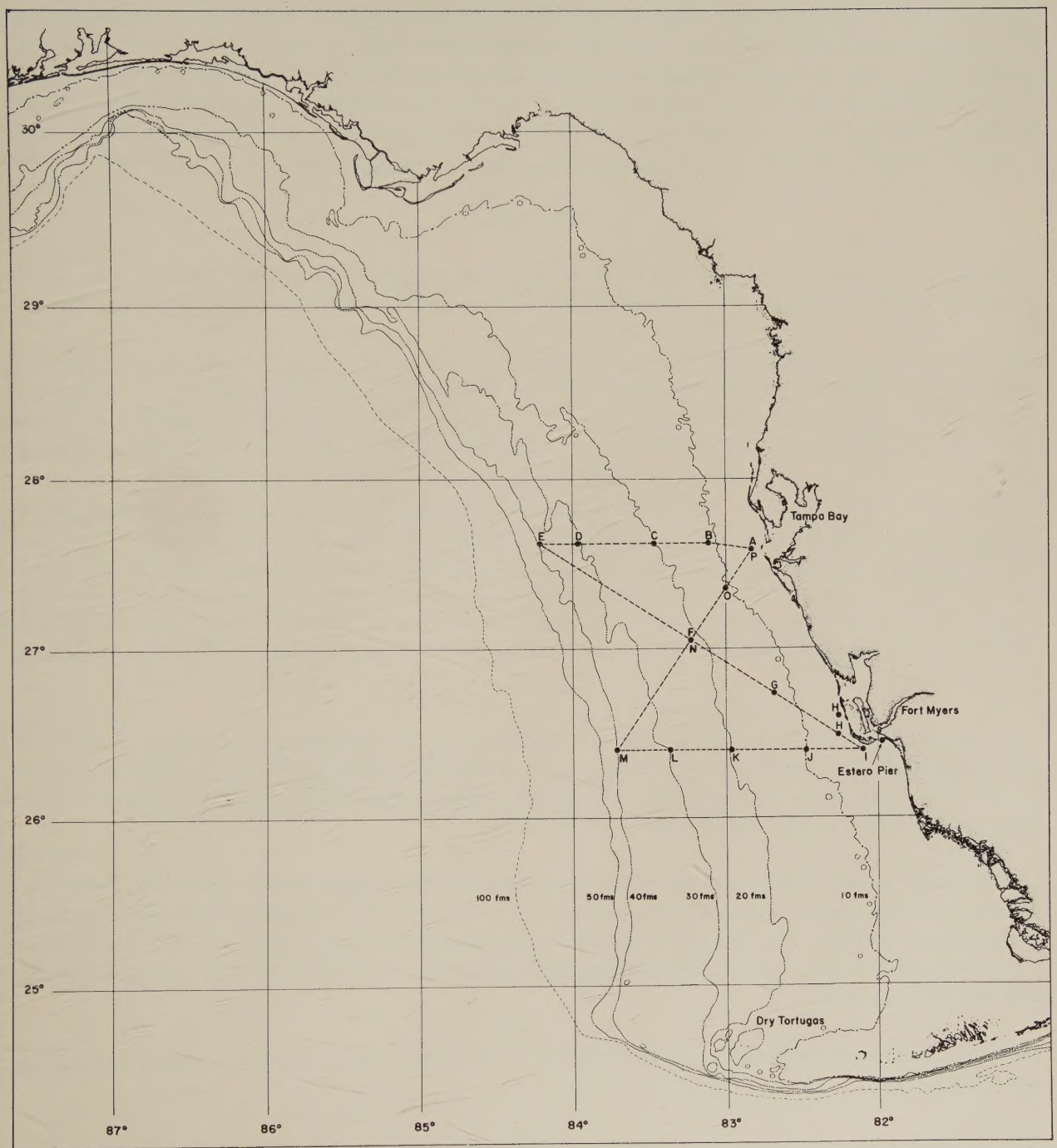

Figure 1. Hourglass cruise pattern and station locations.

SYSTEMATICS

CLASS CRUSTACEA PENNANT, 1777
SUBCLASS COPEPODA LATREILLE, 1831
ORDER CYCLOPOIDA BÜRMEISTER, 1834
Family Lamippidae Joliet, 1882
Genus *Linaresia* De Zulueta, 1908

Linaresia bouligandi, new species

Plate I, Figures 1-4

Material examined: HOURGLASS STATION E: 1♀ (HOLOTYPE); 3 March 1967; ZMA Co. 102.645. — 1♀ (PARATYPE); 2 August 1967; USNM 172095. — 1♀ fragment; 5 October 1965; ZMA Co. 102.646.

Description: Female: Total length (body prolongations stretched) of holotype about 1.9 mm, of paratype about 2.3 mm. Length of central, ovate part of body (trunk) 0.52 mm in holotype, 0.63 mm in paratype. Greatest trunk width 0.41 mm in holotype, 0.56 mm in paratype. Nine pairs of trunk prolongations arranged in six groups presumably corresponding to body somites (Plate I, Figures 1, 2), *viz*.: two pairs extending anteriad from trunk (α, simple, dorsal; and *a*, bifurcate, ventral); two pairs extending caudad (caudal rami, *f*, simple, dorsal; and *e*, bifurcate, ventral); two composite pairs extending laterad (β and γ, simple, dorsal with bifurcate, ventral components, *b* and *c*); and one bifurcate pair extending laterad (*d*, ventral, without dorsal component). All body prolongations coarsely annulate, except for finely annulate *f*. Body prolongations without terminal, sphaerical swellings. Rami of bifurcate prolongations (*a* through *e*) slightly unequal in length. All bifurcate prolongations curved ventrad and inward (at least in preserved state). Caudal end of trunk terminating in rounded lobe (*t*, the "terminal swelling" of Bouligand, 1966: 286); genital apertures (*g*) at base of lobe.

Ventral surface of trunk (Plate I, Figure 2) with two pairs of papilliferous sclerotizations, presumably homologous with legs 1 and 2 (p_1, p_2); two unpaired papilliferous sclerotizations (the "segmentary organs" o_1 and o_2 of Bouligand, 1960); one pair of U-shaped sclerites connected by rod-shaped sclerite (Plate I, Figure 2: *v*; Figure 3), considered by Bouligand as the vulva.

Bases of ventroanterior prolongations (*a*) connected ventrally by sclerotized rim (Plate I, Figures 2, 4: *cf*, central fold). Unpaired papilliferous boss (Plate I, Figures 1, 4: pa_1), pair of unsegmented stumps (probably first antennae, a_1), and pair of prehensile appendages (second antennae, a_2), all dorsal to central fold (not visible in ventral view). First antennae with 0-3 setules; second antennae with stout basal segment and bifid terminal claw.

Type-locality: Hourglass Station E, 27°37′N, 84°13′W; 73 m depth; about 78 nmi due west of Egmont Key, Florida west coast.

Host: Endoparasitic in polyps of the octocoral, *Placogorgia* sp.

Distribution: Known only from the type-locality.

Etymology: The specific name is dedicated in friendship to Mr. Yves Bouligand, Paris, in recognition of his various publications on the genus *Linaresia* and for his discovery of the female of the genus.

Remarks: Females of *Linaresia bouligandi* differ from their Mediterranean congener, *L. mamillifera*, in the following characters: 1) first trunk prolongations (α and *a*) directed anteriad in *L. bouligandi*, laterad in *L. mamillifera*; 2) fifth pair of trunk prolongations (*e*) directed posteriad in *bouligandi*, laterad in *mamillifera*; 3) fifth pair of trunk prolongations (*e*) inserted almost in contact with furcal prolongations (*f*) in *bouligandi*, well separated in *mamillifera*; 4) rami of trunk prolongations *a* through *e* elongate, without distal swelling in *bouligandi*, ventral ramus short and dorsal ramus with terminal bud in *mamillifera*; 5) trunk prolongations α through γ without distal swelling in *bouligandi*, with such swelling in *mamillifera*; 6) antennae (a_1 and a_2) and first papilliferous boss (pa_1) visible only in dorsal view in *bouligandi*, in ventral view in *mamillifera*; 7) lateral papilliferous bosses (pa_2) absent in *bouligandi*, present in *mamillifera*; 8) first antenna (a_1) with 0-3 setules in *bouligandi*, 9-10 in *mamillifera*; and 9) claw of second antenna (a_2) bifid in *bouligandi*, simple in *mamillifera*.

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PLATE I

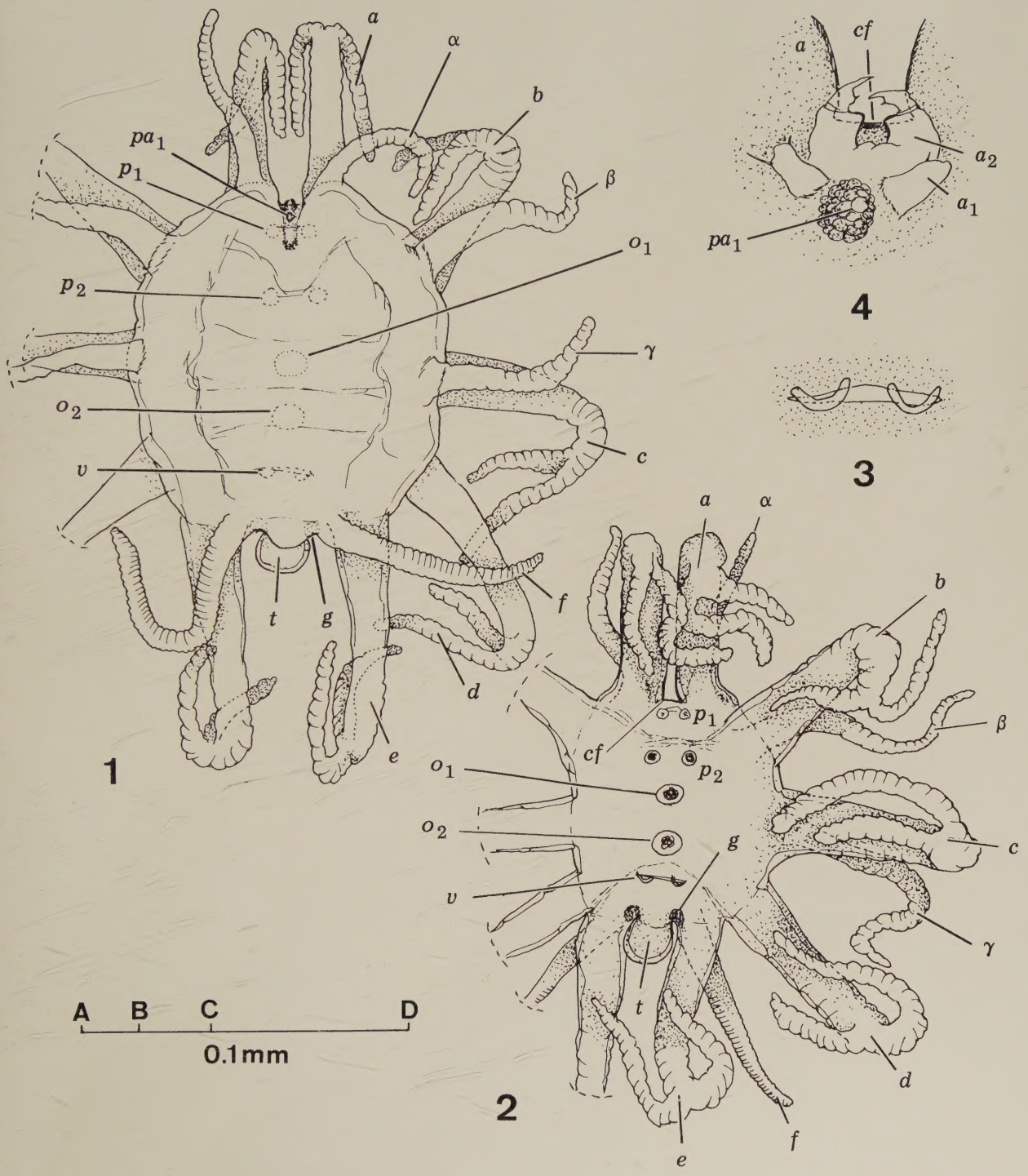
Linaresia bouligandi, n. sp., ♀

Figure 1. Paratype, reconstruction, dorsal aspect, only right trunk prolongations fully shown; scale AB.

Figure 2. Holotype, reconstruction, ventral aspect, only left trunk prolongations fully shown; scale AB.

Figure 3. Sclerotizations *v* of paratype (vulva?), ventral aspect; scale AC.

Figure 4. Cephalic appendages of paratype, dorsal aspect; scale AD.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